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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Applicant : Dragan P. Petrovic
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DECLARATION OF DRAGAN P. PETROVIC

Mail Stop AF
Commissioner for Patents
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Dear Sir:

I hereby declare that I am one of the joint inventors of the above-identified patent application;

I have reviewed the application as filed, amendments to the specification, the figures therefore, and the currently pending claims.

I have also reviewed the Examiner's outstanding Office Action mailed September 15, 2005;

My educational background includes a Ph.D. in Physics, 1991, University of Tennessee.

I have ten and one-half years of experience in designing gas and smoke detectors.

As an experienced engineer in connection with the technology of the above-identified application, it is my opinion that the Examiner's conclusion, relative to Claim 46, that:

"the specification fails to enable one of ordinary skill in the art to create a gas sensor carried by the housing, whereby the gas sensor defines the an internal sensing region with a first opening for an inflow of gas" [Office Action pages 2 and 3]

is erroneous.

In this regard the Examiner's attention is directed to an embodiment shown in Figure 1 of the pending application (Figs. 2-5 show other embodiments) which illustrates a housing 12 that carries a housing or gas sensor 18 for sensing a concentration of a selected gas. The housing or gas sensor 18 defines an internal region (bounded by four sides 18a, 18b, 18c, and 18d) with a first opening for an inflow of gas (see arrow in Fig. 1 labeled "gas flow").

The region bounded by the walls 18a-18d defines a sensing chamber 30a and a reference chamber 30b. Inflowing gas passes through filter 40, condenser 42 and into the region bounded by sides 18a-18d where the concentration of a selected gas can be sensed via sensing chamber 30a and reference chamber 30b. 30a,b are open to each other along plane P.

Further relative to Fig. 1, as described in Paragraph 35 of the published application:

"Housing 18 is covered, at least in part by a filter 40, for example, a semi-permeable membrane, and an adjacent condenser 42 both illustrated in phantom. Filter 40 excludes undesirable particulate matter

and reduces inflow velocity such that movement of gas in housing 18 substantially results from diffusion.

The condenser 42 extracts gas borne water vapor from the inflow by causing it to condense out on the element 42 prior to flowing into either of the chambers 30a, b. It will be understood that a variety of condenser configurations, some examples of which are discussed below, come within the spirit and scope of the invention."

In Fig. 1 condenser 42 is clearly adjacent to housing, gas sensor, 18. The subsequent discussion of the application refers to Figs. 2 through 5.

Fig. 2 illustrates a perforated metal condenser 42-1 having openings 54 into a gas sensing chamber 58 via opening 56. As was the case with Fig. 1 where condenser 42 is adjacent to gas sensor or housing 18, condenser 42-1 would be understood by those of skill in the art to be a metal condenser, as claimed, with openings 54 therethrough. Those openings 54 are aligned with gas inflow opening 56 to enable gas to flow into gas sensing chamber 58.

Further, one of skill in the art, in my opinion, would understand reading the disclosure of the present application as well as viewing Figs. 1 through 5 thereof, that pending claim 46 is further supported by the following exemplary elements illustrated in various of Figs. 1 through 5:

"A housing" -- see housing 12 Fig. 1, housing 12-1 Fig. 2, 12-1 Fig. 3;

"A gas sensor carried by the housing, the sensor defining an internal sensing region with at least a first opening for an inflow of gas carrying fluid" -- see gas sensor 18, Fig. 1, 18-1 Fig. 2, 18-2 Fig. 3, 18-1 Fig. 4, 18-2 Fig. 5; as illustrated in Fig. 2, an opening 56 is provided into gas sensing chamber 58 formed by gas sensor 18-1;

"A first metal, condenser with second openings therethrough" -- see metal condenser 42 Fig. 1, 42-1 Fig. 2, 42-1 Fig. 3, 42-2 Figs. 4,5 and openings 54, Figs 2,3 as well as openings 54-1, Fig. 4;

"The condenser is carried in the housing adjacent to the sensor with the first and second openings aligned for a fluid inflow from outside of the housing into the sensing region"—Fig. 1 illustrates an arrow labeled "gas flow in" extending through filter 40, condenser 42, and regions 36a, b as described in paragraph 35 of the published application, quoted above, condenser 42 is "adjacent" to gas sensor 18;

Further, Figs. 2 through 5 illustrate gas inflow extending through openings 52, 54 and 56, Fig. 2 all of which are aligned, openings 52, 54, 56-1 Fig. 3 all of which are aligned, 52, 54-1, and 56 all of which are aligned, Fig. 4;

Thus, for all of the above reasons, it is my opinion that one of skill in the art, familiar, with the disclosure and figures of the present application, would know how to make and/or use the present invention; and, that the Examiner is wrong in concluding:

"The specification fails to provide any disclosure of the gas sensor having an internal sensing region with at least a first opening, which is aligned with openings of a first, metal conductor." (page 3 Office Action)

I am also of the opinion that the Examiner's below-quoted conclusion (relative to claim 55) on page 3 of the Office Action is erroneous:

"the specification fails to enable one of ordinary skill in the art to create a gas sensor with at least a gas inflow port, whereby condensers and a filter are located adjacent to the gas sensor so as to provide a gas inflow path through perforations located in the condensers, the filter, and the gas inflow port into the gas sensor."

In connection with the above, as described in the subject application, gas sensor 18 senses the concentration of a selected gas. The housing which includes bounding walls 18a-18d defines two interior regions, a sensing chamber and a reference chamber. These chambers are open to one another. It also carries radiant energy sensors 34a,b. Also as described in the pending application and illustrated in Fig. 1, condenser 42 is located adjacent to housing, gas sensor 18. Filter 40 at least partly overlies same.

Figs. 2 through 5 of the subject application disclose various combinations and arrangements of condensers and membranes, corresponding to condenser 42 and filter 40 of Fig 1 which can be used with gas sensors such as the gas sensor 18 disclosed in Fig. 1. Additionally, as illustrated in Fig. 1 (and repeated in Figs. 2 through 5), inflowing gas passes through one or more of the filters or membranes such as membrane 40, 40-1, 40-3, as well as one or more adjacent perforated condensers such as 42, 42-1, 42-3 and into the respective gas sensor.

Hence, one of skill in the art would understand that inflowing gas diffuses through the respective filter or membranes (see paragraphs 20, 21 and 35 of the published application). Additionally, those of skill in the art would understand that the condenser elements such as 42 would be implemented with the slots or holes (see paragraph 19 of the published application), which would enable the gas to pass through the respective condenser or condensers.

The Examiner's attention is also directed, for example, to Fig. 4 of the published application. Fig. 4 illustrates two spaced apart perforated metal condensers 42-2, 42-3 with a membrane filter 40-3 located therebetween. A gas sensor 18-1 is located adjacent to that combination. The gas sensor includes a sensing chamber 58-2 with a gas inflow port 56. The gas inflow port 56 is formed in a bounding wall of sensor 18-1. There is an arrow on Fig. 4 which indicates an inflow of gas through openings 52 and housing 12-1, openings 54-1 in condenser element 42-2, through membrane filter 40-3 through openings in condenser 42-3, through opening 56 into the gas sensing chamber 58-2. One of skill in art would understand, see numbered paragraph 24 of the published application, that gas would pass or move by diffusion throughout the sensing chamber and the associated adjacent reference chamber. In my opinion, one of skill in the art would understand that the condenser(s) 42, 42-1, 42-2 and 42-3 are all disclosed located adjacent to a respective gas sensor such as 18, 18-1, or 18-2.

Thus, I disagree with the Examiner's assertion that:

"the two condensers and filter are not located adjacent the inflow port of the gas sensor as the claim suggests." (page 3, Office Action)

The Examiner then goes on to state:

"The gas sensor disclosed in the specification only receives reflected radiant energy not gas as suggested by the limitations of the claim." (page 3, Office Action)

In this regard the Examiner's attention is directed to gas sensor 18, see Fig. 1, which clearly shows an inflow of gas into the interior region bounded by the walls 18a-18d. Similarly, each of Figs. 2 through 5 illustrates gas flow entering an adjacent gas sensor, having sensor chamber 58 see Fig. 2, having sensing chamber 58-1 see Fig. 3, having sensing chamber 58-2 see Fig. 4 and having sensing chamber 58-3 see Fig. 5 of the published application. Thus, in my opinion, it is clearly erroneous to conclude that the "gas sensor disclosed in the specification only receives reflected radiant energy, not gas as suggested by the limitations of the claim." (Office Action, page 3).

For at least the above reasons it is my opinion that the specification of the present application does, in fact, enable one of skill in the art to make and/or use the claimed invention of claim 55 as well as all of the other pending claims.

DECLARATION

The undersigned declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001

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Declaration of Dragan P. Petrovic

of Title 18 of the United States Code and that such willful, false statements may jeopardize the validity of the application or any registration issuing thereon.

Dated: 12/13/2005

Dragan Petrovic
DRAGAN P. PETROVIC

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